

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	5	"549753" ap.	US-PGPUB; USPAT	ADJ	ON	2007/10/15 09:50
S2	1	("6338763").PN.	US-PGPUB; USPAT	OR	OFF	2007/10/15 09:53
S3	1	("20030024610").PN.	US-PGPUB; USPAT	OR	OFF	2007/10/15 10:04
S4	1	("20050258860").PN.	US-PGPUB; USPAT	OR	OFF	2007/10/15 10:27
S5	1	("4348800").PN.	US-PGPUB; USPAT	OR	OFF	2007/10/15 10:29
S6	1	("6371463").PN.	US-PGPUB; USPAT	OR	OFF	2007/10/15 10:54
S7	3101	(C carbon) and (Si silicon) and (Mn manganese) and (Cr chromium) and (Al aluminum) and steel and spring	US-PGPUB; USPAT	OR	ON	2007/10/15 10:55
S8	1057	(C carbon) and (Si silicon) and (Mn manganese) and (Cr chromium) and (Al aluminum) and (steel same spring)	US-PGPUB; USPAT	OR	ON	2007/10/15 10:56
S9	374	(C carbon) and (Si silicon) and (Mn manganese) and (Cr chromium) and (Al aluminum) and (Ni nickel) and (V vanadium) and (Mo molybdenum) and (Nb niobium) and (steel same spring)	US-PGPUB; USPAT	OR	ON	2007/10/15 11:35
S10	51	148/333.ccls. and spring	US-PGPUB; USPAT	OR	ON	2007/10/15 11:36
S11	14	148/318.ccls. and spring	US-PGPUB; USPAT	OR	ON	2007/10/15 11:42
S12	1	("4909866").PN.	US-PGPUB; USPAT	OR	OFF	2007/10/15 11:56

S13	391	(C carbon) and (Si silicon) and (Mn manganese) and (Cr chromium) and (Al aluminum) and (Ni nickel) and (V vanadium) and (Mo molybdenum) and (Nb niobium) and (steel same spring)	US-PGPUB; USPAT	OR	ON	2008/03/31 17:27
S14	51	148/333.ccls. and spring	US-PGPUB; USPAT	OR	ON	2008/03/31 17:28
S15	15	148/318.ccls. and spring	US-PGPUB; USPAT	OR	ON	2008/03/31 17:28
S16	404	(C carbon) and (Si silicon) and (Mn manganese) and (Cr chromium) and (Al aluminum) and (Ni nickel) and (V vanadium) and (Mo molybdenum) and (Nb niobium) and (steel same spring)	US-PGPUB; USPAT	OR	ON	2008/08/20 16:56
S17	51	148/333.ccls. and spring	US-PGPUB; USPAT	OR	ON	2008/08/20 16:56
S18	15	148/318.ccls. and spring	US-PGPUB; USPAT	OR	ON	2008/08/20 16:56
S19	404	(C carbon) and (Si silicon) and (Mn manganese) and (Cr chromium) and (Al aluminum) and (Ni nickel) and (V vanadium) and (Mo molybdenum) and (Nb niobium) and (steel same spring)	US-PGPUB; USPAT	OR	ON	2008/08/20 16:56
S20	51	148/333.ccls. and spring	US-PGPUB; USPAT	OR	ON	2008/08/20 16:56
S21	15	148/318.ccls. and spring	US-PGPUB; USPAT	OR	ON	2008/08/20 16:57
S22	3	("4842818" "4909866"). PN. OR ("6338763"). URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2008/08/20 16:57
S23	467	(C carbon) and (Si silicon) and (Mn manganese) and (Cr chromium) and (Al aluminum) and (Ni nickel) and (V vanadium) and (Mo molybdenum) and (Nb niobium) and (steel same spring)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2008/08/20 16:58

S24	61	148/333.ccls. and spring	US-PGPUB; USPAT; USOCCR; EPO; JPO	OR	ON	2008/08/20 16:58
S25	16	148/318.ccls. and spring	US-PGPUB, USPAT; USOCCR, EPO; JPO	OR	ON	2008/08/20 16:59
S26	57	148/333.ccls. and spring	US-PGPUB, USPAT	OR	ON	2009/02/10 16:53
S27	15	148/318.ccls. and spring	US-PGPUB, USPAT	OR	ON	2009/02/10 16:53
S28	498	(C carbon) and (Si silicon) and (Mn manganese) and (Cr chromium) and (Al aluminum) and (Ni nickel) and (V vanadium) and (Mo molybdenum) and (Nb niobium) and (steel same spring)	US-PGPUB, USPAT; USOCCR; EPO; JPO	OR	ON	2009/02/10 16:54
S29	70	S26 or S27	US-PGPUB; USPAT; USOCCR; EPO; JPO	OR	ON	2009/02/10 16:54
S30	25	S29 and S28	US-PGPUB; USPAT; USOCCR; EPO; JPO	OR	ON	2009/02/10 16:54
S31	669	420/104.ccls.	US-PGPUB; USPAT; USOCCR; EPO; JPO; DERWENT	ADJ	ON	2009/09/14 16:16
S32	655	148/333.ccls.	US-PGPUB; USPAT; USOCCR; EPO; JPO	OR	ON	2009/09/14 16:18
S33	433	148/318.ccls.	US-PGPUB; USPAT; USOCCR; EPO; JPO	OR	ON	2009/09/14 16:18
S34	1671	S31 or S32 or S33	US-PGPUB; USPAT; USOCCR; EPO; JPO	OR	ON	2009/09/14 16:18
S35	122	S34 and spring	US-PGPUB; USPAT; USOCCR; EPO; JPO	OR	ON	2009/09/14 16:18
S36	101	S35 and (carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr)	US-PGPUB, USPAT; USOCCR, EPO, JPO	OR	ON	2009/09/14 16:18
S37	63	S35 and (carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al)	US-PGPUB, USPAT; USOCCR, EPO, JPO	OR	ON	2009/09/14 16:19

S38	63	148/333.ccls. and spring	US-PGPUB; USPAT	OR	ON	2009/09/14 16:19
S39	19	148/318.ccls. and spring	US-PGPUB; USPAT	OR	ON	2009/09/14 16:19
S40	531	(C carbon) and (Si silicon) and (Mn manganese) and (Cr chromium) and (Al aluminum) and (Ni nickel) and (V vanadium) and (Mo molybdenum) and (Nb niobium) and (steel same spring)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2009/09/14 16:19
S41	79	S38 or S39	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2009/09/14 16:19
S42	30	S41 and S40	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2009/09/14 16:19
S43	1559	(carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al) and spring	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2009/09/14 16:23
S44	227	S43 and martensite	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2009/09/14 16:23
S45	178	S44 and austenite	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2009/09/14 16:24
S46	123	S45 and grain	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2009/09/14 16:24
S47	15618	S46 and prior austenite	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2009/09/14 16:24
S48	17	S46 and prior austenite	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2009/09/14 16:24
S49	1	"7615186"	US-PGPUB; USPAT	ADJ	ON	2010/06/03 11:18
S50	690	420/104.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2010/06/03 14:14
S51	691	148/333.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/06/03 14:14

S52	445	148/318.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/06/03 14:14
S53	1735	S50 or S51 or S52	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/06/03 14:14
S54	132	S53 and spring	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/06/03 14:14
S55	110	S54 and (carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/06/03 14:14
S56	68	S54 and (carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/06/03 14:14
S57	68	148/333.ccls. and spring	US-PGPUB; USPAT	OR	ON	2010/06/03 14:15
S58	22	148/318.ccls. and spring	US-PGPUB; USPAT	OR	ON	2010/06/03 14:15
S59	564	(C carbon) and (Si silicon) and (Mn manganese) and (Cr chromium) and (Al aluminum) and (Ni nickel) and (V vanadium) and (Mo molybdenum) and (Nb niobium) and (steel same spring)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/06/03 14:15
S60	86	S57 or S58	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/06/03 14:15
S61	31	S60 and S59	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/06/03 14:15
S62	1637	(carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al) and spring	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/06/03 14:15
S63	243	S62 and martensite	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/06/03 14:15
S64	192	S63 and austenite	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/06/03 14:15

S65	134	S64 and grain	US-PGPUB; USPAT; USOOCR; EPO; JPO	OR	ON	2010/06/03 14:15
S66	23	S65 and prior austenite	US-PGPUB; USPAT; USOOCR; EPO; JPO	ADJ	ON	2010/06/03 14:15
S67	391	S62 and fatigue	US-PGPUB; USPAT; USOOCR; EPO; JPO	OR	ON	2010/06/03 14:16
S68	14	S67 and proof stress	US-PGPUB; USPAT; USOOCR; EPO; JPO	ADJ	ON	2010/06/03 14:17
S69	21	S67 and prior austenite	US-PGPUB; USPAT; USOOCR; EPO; JPO	ADJ	ON	2010/06/03 14:19
S70	704	420/104.ccls.	US-PGPUB; USPAT; USOOCR; EPO; JPO; DERWENT	ADJ	ON	2010/12/06 15:46
S71	709	148/333.ccls.	US-PGPUB; USPAT; USOOCR; EPO; JPO	OR	ON	2010/12/06 15:46
S72	454	148/318.ccls.	US-PGPUB; USPAT; USOOCR; EPO; JPO	OR	ON	2010/12/06 15:46
S73	1773	S70 or S71 or S72	US-PGPUB; USPAT; USOOCR; EPO; JPO	OR	ON	2010/12/06 15:46
S74	139	S73 and spring	US-PGPUB; USPAT; USOOCR; EPO; JPO	OR	ON	2010/12/06 15:46
S75	115	S74 and (carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (chromium or Cr)	US-PGPUB; USPAT; USOOCR; EPO; JPO	OR	ON	2010/12/06 15:46
S76	69	S74 and (carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or Al)	US-PGPUB; USPAT; USOOCR; EPO; JPO	OR	ON	2010/12/06 15:47
S77	71	148/333.ccls. and spring	US-PGPUB; USPAT	OR	ON	2010/12/06 15:47
S78	26	148/318.ccls. and spring	US-PGPUB; USPAT	OR	ON	2010/12/06 15:47

S79	593	(C carbon) and (Si silicon) and (Mn manganese) and (Cr chromium) and (Al aluminum) and (Ni nickel) and (V vanadium) and (Mo molybdenum) and (Nb niobium) and (steel same spring)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/12/06 15:47
S80	92	S77 or S78	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/12/06 15:47
S81	32	S80 and S79	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/12/06 15:47
S82	1697	(carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al) and spring	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/12/06 15:48
S83	251	S82 and martensite	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/12/06 15:48
S84	198	S83 and austenite	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/12/06 15:48
S85	139	S84 and grain	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/12/06 15:48
S86	24	S85 and prior austenite	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2010/12/06 15:48
S87	400	S82 and fatigue	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2010/12/06 15:48
S88	14	S87 and proof stress	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2010/12/06 15:48
S89	22	S87 and prior austenite	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2010/12/06 15:48
S90	2	"7575646"	US-PGPUB; USPAT	ADJ	ON	2010/12/07 10:35
S91	2	"7615186"	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2011/04/21 15:52

S92	720	420/104.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	ADJ	ON	2011/04/21 15:58
S93	728	148/333.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2011/04/21 15:58
S94	460	148/318.ccls.	US-PGPUB; USPAT; USOCR; EPO, JPO	OR	ON	2011/04/21 15:58
S95	1810	S92 or S93 or S94	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2011/04/21 15:58
S96	145	S95 and spring	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2011/04/21 15:58
S97	120	S96 and (carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2011/04/21 15:58
S98	71	S96 and (carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2011/04/21 15:58
S99	75	148/333.ccls. and spring	US-PGPUB; USPAT	OR	ON	2011/04/21 15:58
S100	26	148/318.ccls. and spring	US-PGPUB; USPAT	OR	ON	2011/04/21 15:58
S101	610	(C carbon) and (Si silicon) and (Mn manganese) and (Cr chromium) and (Al aluminum) and (Ni nickel) and (V vanadium) and (Mo molybdenum) and (Nb niobium) and (steel same spring)	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2011/04/21 15:58
S102	96	S99 or S100	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2011/04/21 15:58
S103	34	S102 and S101	US-PGPUB; USPAT; USOCR; EPO, JPO	OR	ON	2011/04/21 15:58
S104	1758	(carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al) and spring	US-PGPUB; USPAT, USOCR; EPO; JPO	OR	ON	2011/04/21 15:58

S105	257	S104 and martensite	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2011/04/21 15:58
S106	204	S105 and austenite	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2011/04/21 15:58
S107	144	S106 and grain	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2011/04/21 15:58
S108	26	S107 and prior austenite	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2011/04/21 15:58
S109	414	S104 and fatigue	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	ON	2011/04/21 15:59
S110	15	S109 and proof stress	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2011/04/21 15:59
S111	23	S109 and prior austenite	US-PGPUB; USPAT; USOCR; EPO; JPO	ADJ	ON	2011/04/21 15:59

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S112	883	420/104.ccls. or 148/318,333.ccls.	USPAT; UPAD	ADJ	ON	2011/04/21 16:37
S113	76	S112 and spring	USPAT; UPAD	ADJ	ON	2011/04/21 16:39
S114	66	S113 and (carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al)	USPAT; UPAD	OR	ON	2011/04/21 16:43
S115	41	S113 and (carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al)	USPAT; UPAD	OR	ON	2011/04/21 16:43

S116	277	(C carbon) and (Si silicon) and (Mn manganese) and (Cr chromium) and (Al aluminum) and (Ni nickel) and (V vanadium) and (Mo molybdenum) and (Nb niobium) and (steel same spring)	USPAT; UPAD	OR	ON	2011/04/21 16:44
S117	109	S116 and ("148".clas. or "420".clas.)	USPAT; UPAD	OR	ON	2011/04/21 16:45
S118	91	(carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al) and spring and martensite and austenite	USPAT; UPAD	OR	ON	2011/04/21 16:48
S119	6052	(carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al) and spring and martensite and prior austenite	USPAT; UPAD	OR	ON	2011/04/21 16:48
S120	2120973	(carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al) and spring and martensite and prior austenite grain size	USPAT; UPAD	OR	ON	2011/04/21 16:48
S121	6	(carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al) and spring and martensite and prior austenite	USPAT; UPAD	ADJ	ON	2011/04/21 16:48
S122	0	(carbon or C) same (silicon or Si) same (manganese or Mn) same (chromium or Cr) same (aluminum or al) and spring and martensite and prior austenite grain size	USPAT; UPAD	ADJ	ON	2011/04/21 16:49

4/21/2011 4:59:43 PM

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